

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

Claim 1 (currently amended) A water/air contact medium for use in an evaporative cooler, comprising

a fibrous material; and

~~impregnated with a~~ water insoluble thermoplastic compound that impregnates the fibrous material, wherein the water insoluble thermoplastic compound having a continuous phase consisting consisting essentially of one or more water insoluble amorphous cationic polymers and one or more cationic groups pendent to the one or more water insoluble amorphous cationic polymers to give an overall positive charge to inhibit, ~~for inhibiting~~ deposition of one or more dissolved or particulate contaminants ~~in the water onto the medium, wherein the one or more amorphous cationic polymers comprise at least one cationic group, wherein the water insoluble thermoplastic compound has continuous phase has an overall cationic charge, the continuous phase comprising a nonpolar solubility parameter δ_n within the range of about 6.5 to about 8.5 g-cal/mole, a polar solubility parameter δ_p within the range of zero to about 8.5 g-cal/mole, and a hydrogen bond solubility parameter δ_h , within the range of zero to about 7.0 g-cal/mole.~~

Claim 2 (currently amended) ~~A~~ The contact medium as recited in claim 1, wherein the water insoluble thermoplastic compound continuous phase also has a surface tension between about 20 and 70 dynes/cm and an interfacial tension with in-service water between zero and about 30 dynes/cm.

Claim 3 (cancelled)

Claim 4 (currently amended) ~~A~~ The contact medium as recited in claim 1, wherein the water insoluble thermoplastic compound continuous phase has

a nonpolar solubility parameter δ_n within the range of about 6.5 to about 8.5 g-cal/mole, a polar solubility parameter δ_p within the range of about 2.5 to about 7.5 g-cal/mole, and a hydrogen bond solubility parameter δ_h , within the range of about 0.7 to about 5.0 g cal/mole.

Claim 5 (currently amended) ~~A~~ The contact medium as recited in claim 1, wherein the water insoluble thermoplastic compound ~~continuous phase~~ has a nonpolar solubility parameter δ_n within the range of about 6.5 to about 8.5 g-cal/mole, a polar solubility parameter δ_p within the range of about 3.0 to about 5.5 g-cal/mole, and a hydrogen bond solubility parameter δ_h , within the range of about 1.0 to about 4.0 g cal/mole.

Claim 6 (currently amended) ~~A~~ The contact medium as recited in claim 1, wherein the water insoluble thermoplastic compound ~~continuous phase~~ has a surface tension between about 30 and about 68 dynes/cm, and an interfacial tension with in-service water between zero and about 23 dynes/cm.

Claim 7 (currently amended) ~~A~~ The contact medium as recited in claim 4, wherein the water insoluble thermoplastic compound ~~continuous phase~~ has a surface tension between about 30 and about 68 dynes/cm, and an interfacial tension with in-service water between zero and about 23 dynes/cm.

Claim 8 (currently amended) ~~A~~ The contact medium as recited in claim 5, wherein the water insoluble thermoplastic compound ~~continuous phase~~ has a surface tension between about 30 and about 68 dynes/cm, and an interfacial tension with in-service water between zero and about 23 dynes/cm.

Claim 9 (currently amended) ~~A~~ The contact medium as recited in claim 1, wherein the water insoluble thermoplastic compound ~~continuous phase~~ has a surface tension between about 40 and about 68 dynes/cm, and an interfacial tension with in-service water between zero and about 15 dynes/cm.

Claim 10 (currently amended) ~~A~~ The contact medium as recited in claim 4, wherein the water insoluble thermoplastic compound ~~continuous phase~~ has a surface tension between about 40 and about 68 dynes/cm, and an interfacial tension with in-service water between zero and about 15 dynes/cm.

Claim 11 (currently amended) ~~A~~ The contact medium as recited in claim 5, wherein the water insoluble thermoplastic compound ~~continuous phase~~ has a surface tension between about 40 and about 68 dynes/cm, and an interfacial tension with in-service water between zero and about 15 dynes/cm.

Claim 12 (currently amended) ~~A~~ The contact medium as recited in claim 1, further comprising a discontinuous phase dispersed in the continuous phase.

Claim 13 (currently amended) ~~A~~ The contact medium as recited in claim 12, wherein the discontinuous phase further comprises fillers, pigments or extenders or combinations thereof.

Claim 14 (currently amended) ~~A~~ The contact medium as recited in claim 13, wherein the water insoluble thermoplastic compound ~~continuous phase~~ and the discontinuous phase together make up between three and about sixty percent of the total weight of the contact media when dry.

Claim 15 (currently amended) ~~A~~ The contact medium as recited in claim 13, wherein the water insoluble thermoplastic compound ~~continuous phase~~ and the discontinuous phase together make up between five and about twenty-five percent of the total weight of the contact media when dry.

Claim 16 (currently amended) ~~A~~ The contact medium as recited in claim 13, wherein the water insoluble thermoplastic compound ~~continuous phase~~ and the discontinuous phase together make up between about ten and about fifteen percent of the total weight of the contact media when dry.

Claim 17 (currently amended) A water/air contact medium for use in an evaporative cooler, comprising

a fibrous material impregnated with a compound having a water insoluble continuous phase for inhibiting deposition of one or more dissolved or particulate contaminants in the water onto the medium, the water insoluble continuous phase comprises one or more non-chlorinated cationic amorphous polymers, wherein the water insoluble continuous phase has an overall cationic charge and the following properties:

- a) a nonpolar solubility parameter δ_n within the range of about 6.5 to about 8.5 g-cal/mole;
- b) a polar solubility parameter δ_p within the range of zero to about 8.5 g-cal/mole;
- c) a hydrogen bond solubility parameter δ_h within the range of zero to about 7.0 g-cal/mole;
- d) a surface tension ranging between about 20 and 70 dynes/cm; and
- e) an interfacial tension with in-service water ranging between zero and about 30 dynes/cm.

Claim 18 (cancelled)

Claim 19 (currently amended) ~~A~~ The contact medium as recited in claim 17, wherein the water insoluble continuous phase has

a nonpolar solubility parameter δ_n within the range of about 6.5 to about 8.5 g-cal/mole, a polar solubility parameter δ_p within the range of about 2.5 to about 7.5 g-cal/mole, and a hydrogen bond solubility parameter δ_h within the range of about 0.7 to about 5.0 g-cal/mole.

Claim 20 (currently amended) ~~A~~ The contact medium as recited in claim 17, wherein the water insoluble continuous phase has a nonpolar solubility parameter δ_n within the range of about 6.5 to about 8.5 g-cal/mole, a polar solubility parameter δ_p within the range of about 3.0 to about 5.5 g-cal/mole, and a hydrogen bond solubility parameter δ_h within the range of about 1.0 to about 4.0 g-cal/mole.

Claim 21 (currently amended) ~~A~~ The contact medium as recited in claim 17, wherein the water

insoluble continuous phase has a surface tension between about 30 and about 68 dynes/cm, and an interfacial tension with in-service water between zero and about 23 dynes/cm.

Claim 22 (currently amended) A The contact medium as recited in claim 17, wherein the water insoluble continuous phase has a surface tension between about 40 and about 68 dynes/cm, and an interfacial tension with in-service water between zero and about 15 dynes/cm.

Claim 23 (currently amended) A The contact medium as recited in claim 17, further comprising a discontinuous phase dispersed in the continuous phase.

Claim 24 (currently amended) A The contact medium as recited in claim 23, wherein the discontinuous phase further comprises fillers, pigments or extenders or combinations thereof.

Claim 25 (currently amended) A water/air contact medium for use in an evaporative cooler, comprising:

- a) a fibrous material;
- b) an cationic impregnation water insoluble layer comprising a cationic continuous phase deposited on the fibrous material; and
- c) one or more cationic ~~thermoset~~ thermoplastic polymers dispersed in the cationic continuous phase for inhibiting deposition of one or more dissolved or particulate contaminants onto the medium, wherein the one or more cationic ~~thermoset~~ thermoplastic polymers is selected from the group consisting of ~~epoxies~~, polyacetals, polyacrylates, polyacrylics, polyacrylamides, polyalkylamides, polyamides, polyamideimides, polycarbonates, polycarboxylicdihydric esters, polyimides, polyesters, polycellulose acetate butyrates, polydiglycidyletheralkyl/aryldiols, polysilicones, polysiloxanes, polysiloxides, polystyrenes, polysucrose acetate butyrates, polysulfonamides, polysulfones, polyurethanes, polyvinylacetals, and polyvinylhalogens, ~~and~~
~~wherein the a cationic continuous phase has an overall cationic charge and the following properties:~~
 - i) a nonpolar solubility parameter δ_n within the range of about 6.5 to about 8.8 g-cal/mole;
 - ii) a polar solubility parameter δ_p within the range of zero to about 8.5 g-cal/mole;

~~iii) a hydrogen bond solubility parameter δ_h , within the range of zero to about 7.0 g-eal/mole;~~

~~iv) a surface tension ranging between about 20 and 70 dynes/cm; and~~

~~v) an interfacial tension with in-service water ranging between zero and about 30 dynes/cm.~~

Claim 26 (currently amended) A The contact medium as recited in claim 1, wherein the one or more amorphous cationic polymers of the cationic continuous phase is selected from the group consisting of ~~epoxies~~, polyacetals, polyacrylates, polyacrylics, polyacrylamides, polyalkylamides, polyamides, polyamideimides, polycarbonates, polycarboxylicdihydric esters, polyimides, polyesters, polycellulose acetate butyrates, polydiglycidyletheralkyl/aryldiols, polysilicones, polysiloxanes, polysiloxides, polystyrenes, polysucrose acetate butyrates, polysulfonamides, polysulfones, polyurethanes, and polyvinylacetals.

Claim 27 (currently amended) A The contact medium as recited in claim 17, wherein the one or more amorphous cationic polymers of the cationic continuous phase is selected from the group consisting of ~~epoxies~~, polyacetals, polyacrylates, polyacrylics, polyacrylamides, polyalkylamides, polyamides, polyamideimides, polycarbonates, polycarboxylicdihydric esters, polyimides, polyesters, polycellulose acetate butyrates, polydiglycidyletheralkyl/aryldiols, polysilicones, polysiloxanes, polysiloxides, polystyrenes, polysucrose acetate butyrates, polysulfonamides, polysulfones, polyurethanes, and polyvinylacetals.

Claim 28 (currently amended) A The contact medium as recited in claim 25, wherein the one or more ~~thermoset~~ thermoplastic cationic polymers of the non-chlorinated continuous phase is selected from the group consisting of ~~epoxies~~, polyacetals, polyacrylates, polyacrylics, polyacrylamides, polyalkylamides, polyamides, polyamideimides, polycarbonates, polycarboxylicdihydric esters, polyimides, polyesters, polycellulose acetate butyrates, polydiglycidyletheralkyl/aryldiols, polysilicones, polysiloxanes, polysiloxides, polystyrenes, polysucrose acetate butyrates, polysulfonamides, polysulfones, polyurethanes, and polyvinylacetals.

Claim 29 (currently amended) A water-air contact medium for use in an evaporative cooler to inhibiting deposition of one or more dissolved or particulate contaminants comprising:

a fibrous material impregnated with a water insoluble continuous phase for inhibiting deposition of one or more contaminants in the water onto the medium comprising one or more water insoluble non-chlorinated cationic thermoplastic polymers ~~with a nonpolar solubility parameter δ_n between about 6.5 and about 8.5 g, a polar solubility parameter δ_p between about 0.0 and about 8.5 g, a hydrogen bond solubility parameter δ_h , between about 0.0 and about 7.0 g, a surface tension ranging between about 20 and 70 dynes/cm and an interfacial tension with in-service water between about 0.0 and about 30 dynes/cm~~ selected from epoxies, polyacetals, polyacrylates, polyacrylics, polyacrylamides, polyalkylamides, polyamides, polyamideimides, polycarbonates, polycarboxylicdihydric esters, polyimides, polyesters, polycellulose acetate butyrates, polydiglycidyletheralkyl/aryldiols, polysilicones, polysiloxanes, polysiloxides, polystyrenes, polysucrose acetate butyrates, polysulfonamides, polysulfones, ~~polyurethanes~~, and polyvinylacetals.

Claim 30 (currently amended) A contact medium for use in a liquid-air evaporative cooler comprising:

a fibrous material impregnated with a continuous phase comprising ~~a thermoset~~ one or more thermoplastic polymer selected from polyacetals, polyacrylates, polyacrylics, polyacrylamides, polyalkylamides, polyamides, polyamideimides, polycarbonates, polycarboxylicdihydric esters, polyimides, polyesters, polycellulose acetate, polydiglycidyletheralkyl/aryldiols, polysilicones, polysiloxanes, polysiloxides, polystyrenes, polysulfonamides, polysulfones, ~~polyurethanes~~, and polyvinylacetals, wherein the molecular weight is at least about 2500 g/mole;

a discontinuous phase dispersed at least partially within the continuous phase for inhibiting deposition of one or more components in a liquid onto the medium.

Claims 31-32 cancelled